

# ***Health and Safety Plan for the OU 7-13/14 Early Actions Beryllium Project***

**Idaho  
Completion  
Project**

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Bechtel BWXT Idaho, LLC

*March 2004*

**ICP/EXT-04-00210**

**Revision 0**

**Project No. 24059**

# **Health and Safety Plan for the OU 7-13/14 Early Actions Beryllium Project**

**March 2004**

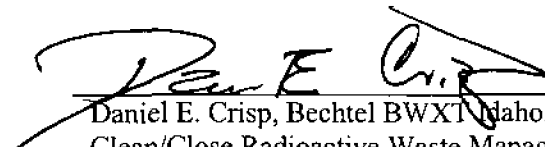
**Idaho Completion Project  
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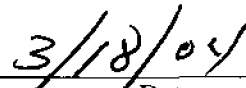
**Prepared for the  
U.S. Department of Energy  
Assistant Secretary for Environmental Management  
Under DOE/NE Idaho Operations Office  
Contract DE-AC07-99ID13727**

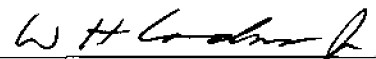
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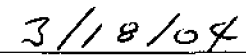
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Approved by

  
\_\_\_\_\_  
Daniel E. Crisp, Bechtel BWXT Idaho, LLC  
Clean/Close Radioactive Waste Management  
Complex Subproject 3 Manager

  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
William H. Landman, Bechtel BWXT Idaho, LLC  
Operable Unit 7-13/14 Early Actions Beryllium  
Project Engineer

  
\_\_\_\_\_  
Date

## **ABSTRACT**

This health and safety plan establishes the requirements and controls that will eliminate or minimize health and safety hazards associated with personnel conducting in situ grouting of beryllium block activities at locations inside the Subsurface Disposal Area of the Radioactive Waste Management Complex.

This health and safety plan has been prepared to meet the requirements of the Occupational Safety and Health Administration standard, "Hazardous Waste Operations and Emergency Response." This health and safety plan contains information about the hazards involved in performing in situ grouting tasks and about specific actions and equipment that will be used to protect persons while working at the task site.

The intent of this document is to identify known hazards and to provide a plan for mitigating them. The safety and health professionals supporting these tasks, in conjunction with the subcontractor and subcontractor technical representative conducting these activities, must determine the most appropriate hazard control and mitigation measures based on site-specific conditions and should make changes to this document as appropriate.



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## ACRONYMS

ACGIH	American Conference of Government Industrial Hygienists
ATR	Advanced Test Reactor
BBWI	Bechtel BWXT Idaho, LLC
COC	contaminant of concern
DOE	U.S. Department of Energy
ERO	emergency response organization
ES&H	environment, safety, and health
ETR	Engineering Test Reactor
FTL	field team leader
HASP	health and safety plan
HAZWOPER	hazardous waste operations and emergency response
HSO	health and safety officer
IARC	International Agency for Research on Cancer
IH	industrial hygienist
INEEL	Idaho National Engineering and Environmental Laboratory
ISMS	Integrated Safety Management System
JSA	job safety analysis
MSDS	material safety data sheet
MTR	Materials Test Reactor
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program
OMP	Occupational Medical Program
OSHA	Occupational Safety and Health Administration
POC	point of contact
POD	plan of the day

PPE	personal protective equipment
PWO	project work order
RadCon	Radiological Control
RCT	radiological control technician
RWMC	Radioactive Waste Management Complex
RWP	radiological work permit
SDA	Subsurface Disposal Area
SRM	Subcontractor Requirements Manual
STEL	short-term exposure limit
STR	subcontractor technical representative
SWP	safe-work permit
TLV	threshold limit value
TRU	transuranic
VOC	volatile organic compound
VPP	Voluntary Protection Program
WCC	Warning Communications Center

# Health and Safety Plan for the OU 7-13/14 Early Actions Beryllium Project

## 1. INTRODUCTION

### 1.1 Purpose

This health and safety plan (HASP) establishes the requirements and controls that will eliminate or minimize health and safety hazards associated with personnel conducting in situ beryllium block grouting activities inside the Subsurface Disposal Area (SDA) of the Radioactive Waste Management Complex (RWMC) at the Idaho National Engineering and Environmental Laboratory (INEEL).

Between 1970 and 1993, beryllium reflectors and other components irradiated in the Advanced Test Reactor (ATR), Engineering Test Reactor (ETR), and Materials Test Reactor (MTR) were buried in trenches and soil vaults in the RWMC SDA. These reflectors contain a significant quantity of Carbon-14 (C-14), which has been identified as a notable contributor to near-term risk of polluting groundwater beneath the RWMC. This is because beryllium is susceptible to corrosion, and C-14 is highly mobile once released to the groundwater. To reduce this risk, the grouting project will encapsulate the beryllium blocks in a grout material injected in the subsurface soil around the blocks. The grout will prevent water intrusion and thus reduce corrosion and will inhibit release of C-14 and other contaminants. Other beryllium-containing waste materials disposed of in the SDA will not be included in this grouting project.

This HASP governs all tasks associated with the grouting project. Employees of Bechtel BWXT Idaho, LLC (BBWI); subcontractors to BBWI; or other U.S. Department of Energy (DOE) laboratory personnel will perform all tasks. Persons not normally assigned to work at the INEEL, such as representatives of DOE, the State of Idaho, Occupational Safety and Health Administration (OSHA), and the U.S. Environmental Protection Agency, are not considered field team members and fall under the definition of “occasional site workers,” as stated in OSHA standards “Hazardous Waste Operations and Emergency Response” (HAZWOPER) (29 CFR 1910.120 and 29 CFR 1926.65).

This HASP has been prepared to meet the requirements of HAZWOPER (29 CFR 1910.120 and 29 CFR 1926.65). Its preparation is consistent with information found in the National Institute of Occupational Safety and Health (NIOSH), OSHA, United States Coast Guard, and U.S. Environmental Protection Agency *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities* (NIOSH 1985); *Manual 14A—Safety and Health—Occupation Safety and Fire Protection* (Manual 14A); *Manual 14B—Safety and Health—Occupational Medical and Industrial Hygiene* (Manual 14B); “Radiological Control Manual” (PRD-183); and *Manual 15B—Radiation Protection Procedures* (Manual 15B). The beryllium block grouting project is segmented from other activities at the RWMC in “Hazard Assessment Document for Beryllium Block Grouting at the RWMC (Draft).”<sup>a</sup> The hazard classification shows that no additional safety analysis is required. Operations will be performed under control of the RWMC Radiation Protection Program, Industrial Hygiene Program, Industrial Safety Program, and other programs required by regulations.

This HASP will be reviewed and revised by the necessary project environmental, safety, health, and radiological professionals to ensure its effectiveness and suitability throughout the project.

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a. HAD-268, 2004, “Hazard Assessment Document for Beryllium Block Grouting at the RWMC (Draft),” Rev. B, Idaho National Engineering and Environmental Laboratory.

## **1.2 Idaho National Engineering and Environmental Laboratory Site Description**

The INEEL, formerly the National Reactor Testing Station, encompasses 890 mi<sup>2</sup> and is located approximately 34 mi west of Idaho Falls, Idaho (see Figure 1-1). The U.S. Atomic Energy Commission, which was renamed the DOE, established the National Reactor Testing Station, currently the INEEL, in 1949 as a site for building and testing a variety of nuclear facilities. The INEEL also has been the storage facility for transuranic (TRU) radionuclides and radioactive low-level waste since 1952. At present, the INEEL supports the engineering and operations efforts of the DOE and other federal agencies in areas of nuclear safety research, reactor development, reactor operations and training, nuclear defense materials production, waste management technology development, and energy technology and conservation programs. The U.S. Department of Energy Idaho Operations Office has responsibility for the INEEL and designates authority to operate the INEEL to government contractors. The BBWI current primary contractor for the U.S. Department of Energy Idaho Operations Office at the INEEL, provides managing and operating services to the majority of INEEL facilities.

### **1.2.1 Radioactive Waste Management Complex**

The RWMC is located in the southwestern corner of the INEEL (as depicted in Figure 1-1) and occupies 70 ha (174 acres). The RWMC fence defines the facility boundaries. In 1952 the U.S. Atomic Energy Commission selected the RWMC as a waste disposal site for solid low-level radioactive waste. In addition to waste generated at the INEEL, waste from other DOE facilities is stored and disposed of at the RWMC.

The SDA (shown in Figure 1-2) comprises all property from the center of the RWMC westward and is surrounded by a soil berm and drainage channel. The site was initially established in July 1952 as the Nuclear Reactor Testing Station Burial Ground on 5 ha (13 acres). The facility was expanded incrementally over the years and, from 1988, has covered 39.2 ha (96.8 acre). The SDA is a radioactive waste disposal site. Transuranic and low-level waste has been buried in pits, trenches, soil vaults, and one aboveground pad since 1952. The waste contains other nonradioactive hazardous materials, such as mercury, beryllium, asbestos, zirconium fines, heavy metals, solidified acids and bases, solvents and degreasing agents, and sodium and potassium salts.

The Transuranic Storage Area is a 22.6-ha (56-acre) facility located in the southern portion of the RWMC. The Transuranic Storage Area was established in 1970 as an interim storage facility when subsurface disposal of waste containing TRU concentrations greater than 100 nCi/g in the SDA was discontinued. Operations at the Transuranic Storage Area include waste segregation, examination, and certification in addition to interim storage.

The operations and administration area contains administrative offices, security and gatehouse operations, Radiological Control (RadCon) support, maintenance buildings, equipment storage, and miscellaneous support facilities. A more detailed summary of RWMC operations is provided in the *Interim Risk Assessment and Contaminant Screening for the Waste Area Group 7 Remedial Investigation* (Becker et al. 1998).

The current mission of the Clean/Close RWMC Subproject is to provide waste management for the present and future needs of the INEEL and of assigned DOE off-Site generators of low-level and TRU waste and to retrieve, examine, and certify stored TRU waste for ultimate shipment to the DOE Waste Isolation Pilot Plant near Carlsbad, New Mexico.

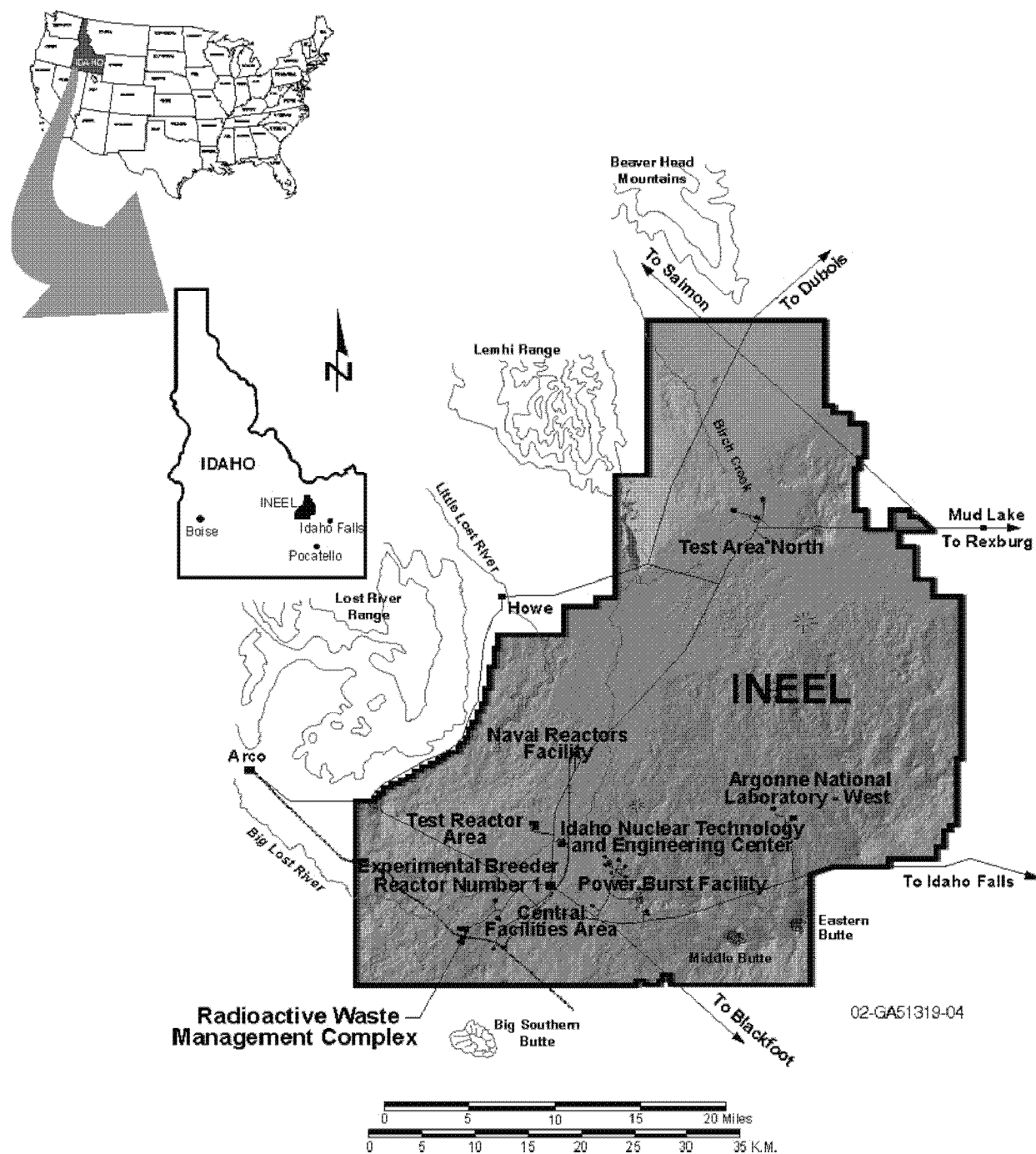


Figure 1-1. Location of the Radioactive Waste Management Complex at the Idaho National Engineering and Environmental Laboratory.



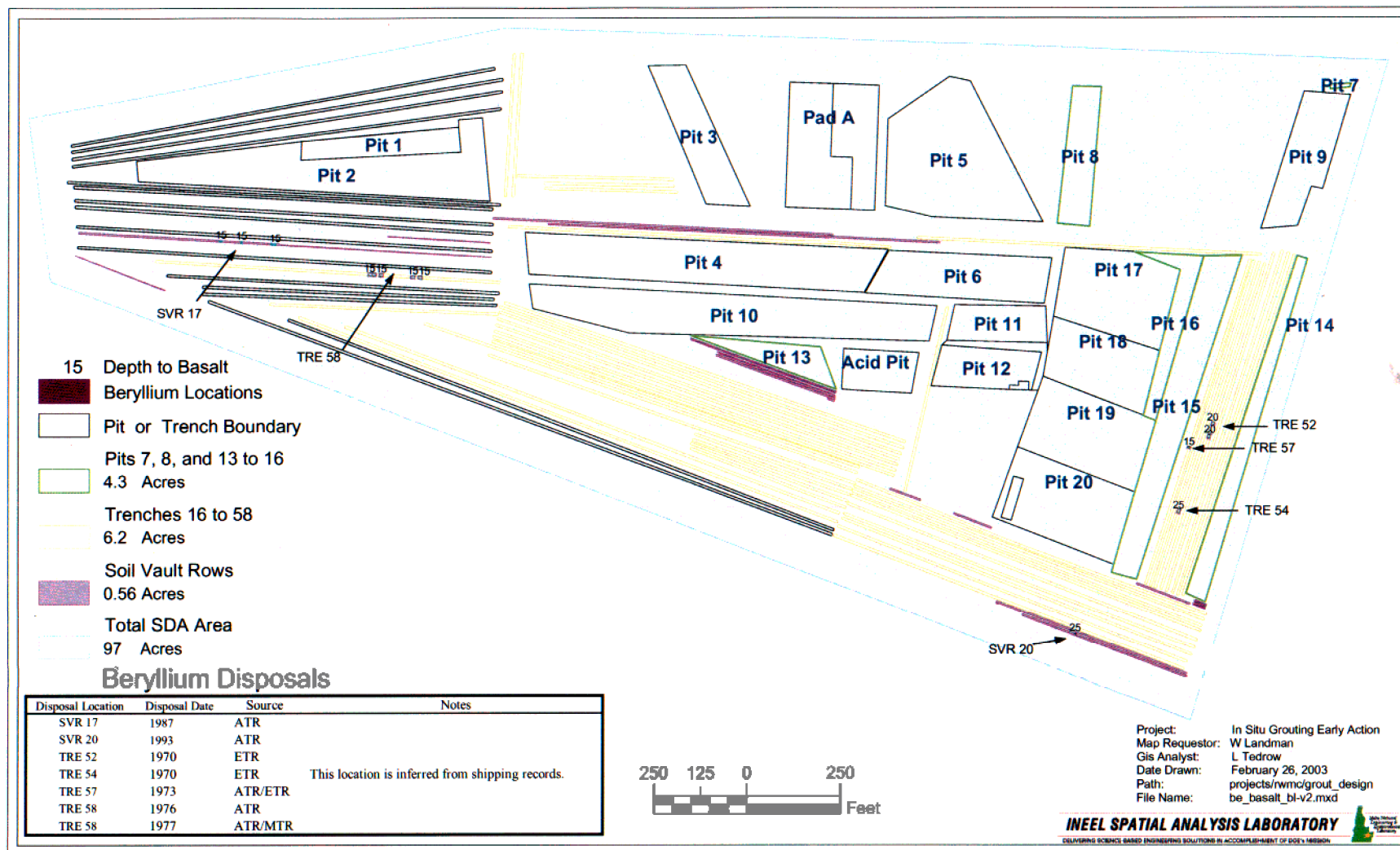


Figure 1-2. Subsurface Disposal Area at the Radioactive Waste Management Complex.

## **1.2.2 Beryllium Blocks Buried at the Radioactive Waste Management Complex**

Between 1970 and 1993, beryllium reflectors and other components irradiated in the ATR, ETR, and MTR were buried in trenches and soil vaults in the RWMC SDA. The disposed-of beryllium was used as a neutron reflector in INEEL test nuclear reactors. It includes 20 beryllium blocks from ATR Cores 1, 2, and 3; nine outer shim control cylinders from ATR Cores 1 and 2; and one beryllium reflector assembly each from the MTR and ETR. The beryllium reflector waste was disposed of in 1970, 1976, 1977, 1987, and 1993. The total disposed-of beryllium is 4,742 kg (10,454 lb).

Each ATR beryllium reflector block is 51 in. long and can be fit in a circle nominally 20 in. in diameter with a metal volume of 1.55 ft<sup>3</sup> and a mass of 179.5 lb. The outer shim control cylinders are circular cylinders that hold hafnium plates used to control the reactor flux. They are 7.25 in. in diameter and 46.8 in. long and weigh 125 lb. The MTR reflector comprised a large number of variously shaped pieces, each 38.98 in. high. The total mass was 5,750 lb. The ETR had four reflector blocks of 4.5 × 35 × 37.5 in. that weighed 310 lb. The mass of ETR disposed-of beryllium is estimated to be 1,278.6 lb.

The beryllium blocks were disposed of in steel packages as remote-handled low-level waste having exposure rates higher than 500 mR/hour at 3.28 ft. In some cases, the containers were fully or partially covered with Herculite.

## **1.3 Scope**

The scope of the in situ grouting of the beryllium blocks includes site preparation activities, mobilization of equipment to the SDA locations, placement of the grout, stabilization of the grouted locations, demobilization of equipment, and all support activities associated with conducting the grouting activities in the SDA.

The beryllium block grouting project will be performed in specified trenches and soil vaults in the SDA of the RWMC as indicated in Figure 1-2. The beryllium blocks buried in the trenches are collocated with other waste. For segmentation, collocated waste buried within 10 ft of the beryllium blocks will be considered part of this activity. There is no driving mechanism to cause the collocated waste beyond 10 ft to be affected by or involved in activities related to grouting. The beryllium blocks buried in the soil vaults are in holes physically separated from other waste by the surrounding soil.

The desired result on in situ grouting of beryllium blocks in SDA trenches and soil vault rows is the formation of a stabilized waste monolith with low hydraulic conductivity. The result will be to minimize the infiltration of water, which will reduce corrosion of the blocks and the migration of contaminants of concern (COCs) from the blocks.

### **1.3.1 Grouting Process**

The grouting process will consist of emplacing grout around the buried beryllium blocks to prevent water intrusion and outward migration of radionuclides from the blocks. The grouting is accomplished by drilling holes into or near the waste and injecting grout at high pressure through nozzles in the drill stem. The injected grout creates a series of interconnected columns that form a solid monolith of soil, waste, and grout. A conceptual schematic is shown in Figure 1-3.

A drill, mounted on a moveable platform, is used to penetrate the subsurface and emplace the grout. Roto-percussion and a rotating drill string are used to penetrate the waste zone next to the blocks.

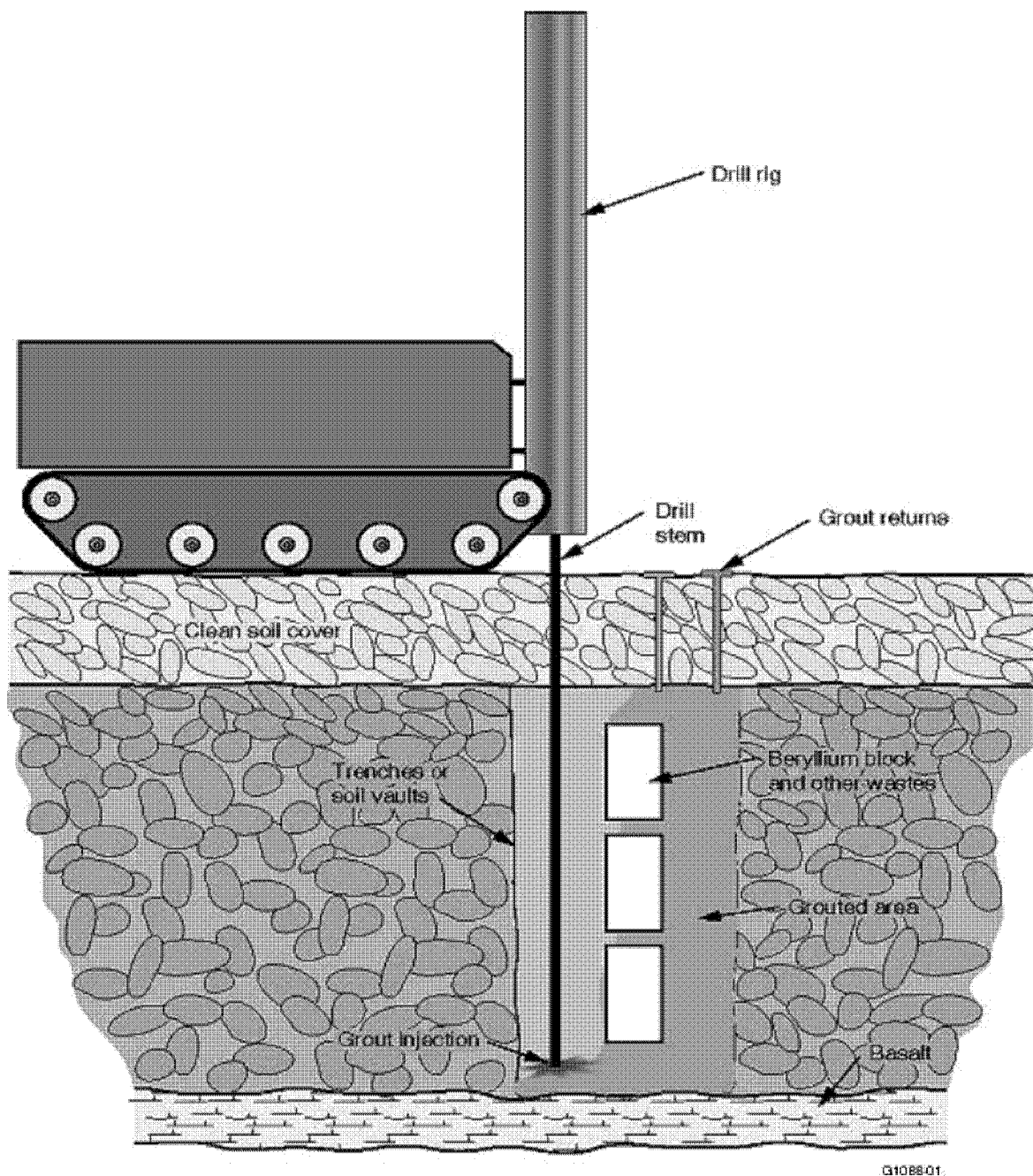


Figure 1-3. Conceptual schematic of in situ grouting.

The drill pipe is hollow, and grout is fed at high pressure to nozzles at the end of the drill stem. Penetration of the beryllium blocks is not intended. Once the drill stem is inserted into the basalt interface below the waste seam, grout is injected using the nozzles typically located 180 degrees apart on the bottom of the drill stem. The drill string is then withdrawn in discrete, predetermined steps. The time spent on any given step and the rotation of the drill vary depending on waste, grout, and soil type. Grouting is stopped at the top of the waste material, leaving at least a 3-ft barrier of ungrouted overburden material.

As the grout is injected near the top of the column, some grout material will extrude out of the ground and create a pool of grout, called grout returns, on the surface. The percentage of grout returns varies with the viscosity of the grout, the permeability of the soil and waste, and the depth where grouting is terminated. This grout may entrain subsurface contaminants and transport them to the surface. These contaminants will be mixed with the grout and not readily released. As the grout hardens, it will contain these contaminants, although some may be released later if the top layer of grout dries and flakes. A layer of clean grout may be placed over the grout returns to prevent releasing entrained contaminants. Also, additional clean soil cover will be added for contouring and closure.

## **1.4 Additional Activities**

Ancillary activities that may be performed in conjunction with in situ grouting activities include the following:

- Prepare or revise existing National Environmental Policy Act documentation, including an environmental checklist (as required)
- Prepare work control documentation and integrated planning sheets in accordance with “Integrated Work Control Process” (STD-101)
- Complete a hazards screening checklist and job walk-downs
- Prepare a job safety analysis (JSA)
- Submit document action requests for changes or revisions to the existing project plan or other project documents.



## **2. KEY SITE PERSONNEL RESPONSIBILITIES**

The organizational structure for this project reflects the resources and expertise required to perform the work while minimizing risks to worker health and safety, the environment, and the general public. The primary Early Actions Beryllium Project positions, lines of responsibility and communication, and the project structure are shown on the organization chart for the project (see Figure 2-1). This organization chart is not all-inclusive but shows the structure for resources assigned to complete field tasks. The following subsections outline the responsibilities of key site personnel.

### **2.1 Task-Site Responsibilities**

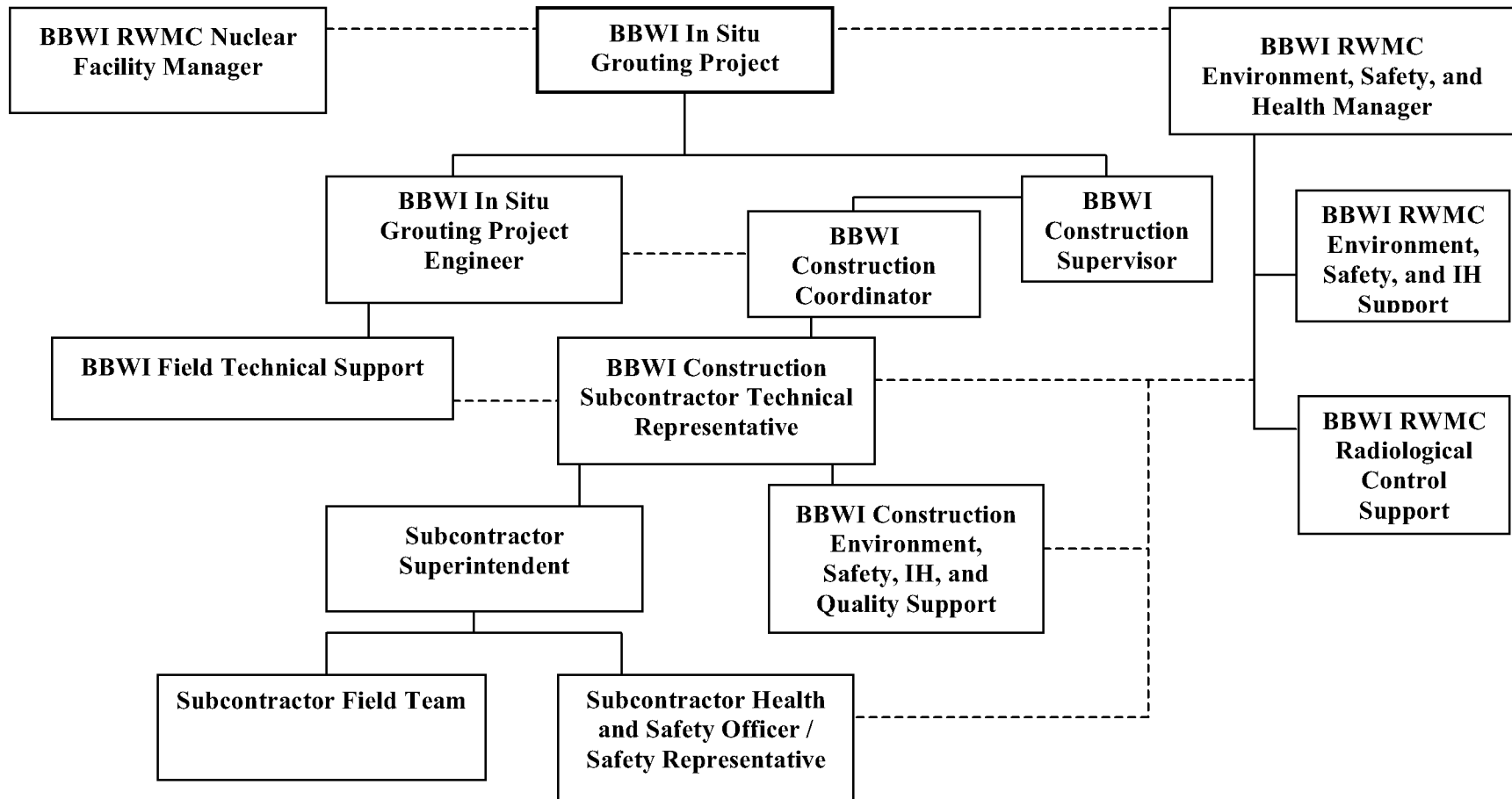
#### **2.1.1 Beryllium Block In Situ Grouting Project Manager**

The project manager has the ultimate responsibility for the technical quality of the project, for maintaining a safe environment, and for the safety and health of all personnel during field activities performed by or for the project. The project manager provides technical coordination and interfaces with the U.S. Department of Energy Idaho Operations Office. The project manager ensures that:

- Project and program activities are conducted in accordance with all applicable federal, state, local, and company requirements and agreements
- Project budgets and schedules are approved and monitored to be within budgetary guidelines
- Personnel, equipment, subcontractors, and services are available
- Direction is provided for the development of tasks, evaluation of findings, development of conclusions and recommendations, and production of reports.

#### **2.1.2 Radioactive Waste Management Complex Environment, Safety, and Health Manager**

The RWMC environment, safety, and health (ES&H) manager, or designee, is responsible to manage ES&H resources to ensure that ES&H programs, policies, standards, procedures, and mandatory requirements are planned, scheduled, implemented, and executed in day-to-day operations for the RWMC. The manager directs the ES&H compliance accomplishments of all activities by providing technical and administrative direction to subordinate staff, and by coordinating with related functional entities. The ES&H manager represents the project in all ES&H matters. This includes responsibility for project ES&H management compliance and oversight for all Comprehensive Environmental Response, Compensation and Liability Act (42 USC § 9601 et seq., 1980) operations planned and conducted at the RWMC.



Line of Authority \_\_\_\_\_

Line of Communication -----

Figure 2-1. In situ grouting of beryllium blocks project organization chart.

### **2.1.3 Radioactive Waste Management Complex Balance of Plant Nuclear Facility Manager**

The RWMC balance of plant nuclear facility manager ensures all activities conducted during the project comply with the RWMC safety authorization, as applicable. The nuclear facility manager shall review the project and provide oversight to ensure the work is executed safely and the project activities are integrated with other RWMC facilities and projects.

### **2.1.4 Beryllium Block In Situ Grouting Project Engineer**

The project engineer is responsible for the overall technical quality of the project as well as for the technical content and quality of project deliverables. Additional responsibilities of the project engineer include:

- Providing project-specific point-of-contact (POC) services for the recruitment and staffing of projects for the scientific, technical, and engineering staff
- Being cognizant and staying ahead of technical project issues and focusing on planning, design, and execution of tasks to ensure compliance with environmental regulations, permits, INEEL policies, and DOE orders
- Maintaining close coordination with other key project POCs to maintain project schedules and milestones and to develop action plans (as required) that meet project goals
- Coordinating and scheduling formal and informal reviews of all project-produced documentation to ensure scientific, technical, and engineering excellence in the delivered product
- Coordinating and planning appropriate mitigation strategies to minimize long-term impacts of the tasks conducted
- Being responsible for technical oversight and direction in development and acceptance of products and deliverables
- Identifying scientific, technical, and engineering issues that affect the cost-effectiveness, constructability, and operation or maintenance of systems developed for deployment.

### **2.1.5 Construction Management Supervisor**

The construction management supervisor at the RWMC is responsible for providing recommendations and information during project planning and design concerning constructability issues and overall construction management strategies. The construction management supervisor will be responsible for overseeing the subcontract requirements in accordance with the project plan, schedule, and budget. The construction management supervisor is responsible for ensuring that adequate construction management support staffing is provided to support the subcontract as necessary to execute the project tasks.

### **2.1.6 Construction Management Construction Coordinator**

The construction management construction coordinator is responsible for implementing the construction phase of the project in the field. The construction coordinator will monitor progress on work packages for cost, schedule, and technical performance of the project. The construction coordinator will



resolve claims and change orders with appropriate input from the construction management supervisor, project engineer, and project manager. The construction coordinator will coordinate dispute resolution between the subcontractor and BBWI and will ensure that requirements of the subcontract are enforced.

#### **2.1.7 Construction Management Subcontract Technical Representative**

The construction management subcontract technical representative (STR) interacts with the subcontractor to coordinate and ensure that field activities are conducted in compliance with the requirements of the subcontract and that all tasks at the job site are conducted in a safe and compliant manner. All health and safety issues must be brought to the attention of the STR. Specific responsibilities include:

- Enforcing task-site control and documenting field activities
- Ensuring project-specific briefings and reviews are completed in accordance with the requirements outlined in “Performing Pre-Job Briefings and Documenting Feedback” (MCP-3003)
- Reviewing and approving contractor invoices
- Enforcing terms and conditions of the contract
- Enforcing and coordinating ES&H requirements and activities and overseeing compliance with *BBWI Subcontractor Requirements Manual (SRM) (TOC-59)*
- Managing emergency and accident response and coordination
- Conducting ES&H and quality assurance inspections
- Coordinating and administering contract warranty issues
- Performing contract close-out activities.

#### **2.1.8 Bechtel BWXT Idaho, LLC, Safety Engineer**

Safety engineering support from BBWI will be provided by construction management safety engineers and RWMC safety engineers. Safety support will be coordinated through the STR to provide oversight of the subcontractor’s implementation of applicable safety and health requirements and mitigations included in this HASP, the JSA, project work order (PWO), SRM (TOC-59), and safe-work permit (SWP). Noncritical issues will be coordinated through the STR for resolution with the subcontractor. The safety engineers may interact directly with the subcontractor’s health and safety officer (HSO) to identify and recommend resolutions to hazards requiring immediate action. The safety engineers will be responsible for ensuring this HASP remains current with the work and shall update it as necessary.

#### **2.1.9 Bechtel BWXT Idaho, LLC, Industrial Hygienist**

The IH support from BBWI will be provided by construction management industrial hygienists (IHs) and RWMC IHs. Support will be coordinated through the STR to provide oversight of the subcontractor’s implementation of applicable safety and health requirements and mitigations included in this HASP, the JSA, PWO, SRM, and SWP. Noncritical issues will be coordinated through the STR for

resolution with the subcontractor. The IH may interact directly with the subcontractor's HSO to identify and recommend resolutions to hazards requiring immediate action.

The IH support personnel will provide sampling and monitoring support for all BBWI personnel and will provide the subcontractor with IH sampling and monitoring support related to volatile organic compounds (VOCs) and beryllium exposure. The IH will work through the STR to recommend changes to personal-protective-equipment levels based on the actual field conditions.

#### **2.1.10 Bechtel BWXT Idaho, LLC, Radiological Control Engineers**

The radiological engineer provides radiological support to the project. Specific duties and responsibilities include acting as the POC for all radiation protection issues related to the project and ensuring that radiological hazards are identified and that appropriate controls are implemented to maintain worker exposure to radiological hazards as low as reasonably achievable.

#### **2.1.11 Bechtel BWXT Idaho, LLC, Radiological Control Technicians**

The radiological control technicians (RCTs) provide field monitoring and sampling support to the project. The RCTs will monitor implementation of RadCon requirements during all field activities and shall ensure that all field activities are conducted in accordance with the radiological work permit (RWP) and the applicable radiological control procedures in the SRM.

#### **2.1.12 Bechtel BWXT Idaho, LLC, Environmental Professionals**

The environmental professionals provide overall technical expertise related to environmental regulatory issues, natural and cultural resources, waste minimization, waste disposition, and environmental oversight to the project.

#### **2.1.13 Bechtel BWXT Idaho, LLC, Quality Assurance Engineer**

The quality assurance engineer provides or coordinates the project monitoring, assessments, and surveillance to ensure that the materials and supplies used on the project meet the applicable requirements for quality assurance.

#### **2.1.14 Bechtel BWXT Idaho, LLC, Field Technical Support**

Field technical support personnel provide the project with recommendations for successful technical completion of the project and perform oversight to ensure that the work is completed in accordance with the project objectives. The technical support personnel will interface with the subcontractor through the STR and will report to the project engineer. The technical support personnel are responsible to understand and comply with the applicable safety and health requirements and hazard mitigations in the HASP, SRM, JSA, PWO, SWP, and RWP.

#### **2.1.15 Subcontractor Superintendent**

The subcontractor superintendent represents the subcontractor at the work site and implements the subcontract requirements. The subcontractor superintendent is a full-time position required on the project. The subcontractor superintendent will work subcontract and safety issues through the STR and will be the POC for all issues related to the subcontract work while working onsite.

### **2.1.16 Subcontractor Health and Safety Officer/Safety Representative**

The subcontractor HSO is a full-time position and requires the HSO to be onsite at all times during subcontract field operations. This may be the same person and may fulfill the same duties as the subcontractor safety representative. The HSO must have the knowledge necessary to implement the HASP and verify compliance with applicable safety and health requirements. The HSO is responsible for ensuring the safety, health, and radiological requirements are implemented for the subcontractor and for enforcing the requirements for all personnel at the worksite. The following are the subcontractor safety-representative-specific responsibilities:

- Ensures that all subcontractors and personnel comply with the applicable requirements of the HASP, SRM, JSA, SWP, and RWP
- Enforces the project safety standards and requirements in cooperation with the BBWI STR, BBWI safety engineer, BBWI IH, and BBWI RCTs
- Conducts project inspections of equipment, structures, and work in progress to ensure safety and health requirements are implemented
- Plans and coordinates weekly safety meetings to all construction personnel
- Maintains records of all safety-related incidences, including injury and illness investigations
- Submits for approval and maintains the Superfund Amendments and Reauthorization Act Title III reports, Hazardous Materials List, and material safety data sheets (MSDSs).

### **2.1.17 Subcontractor Field Team**

The subcontractor field team includes all personnel working for the subcontractor, or subcontractors to the subcontractor. The subcontractor field team personnel are responsible to understand and execute work in compliance with the applicable safety and health requirements and hazard mitigations in the HASP, SRM, JSA, PWO, SWP, and RWP.

### **2.1.18 Nonfield Team Workers**

All persons who may be at the work site during operations and are not part of the field team (e.g., surveyor or others not assigned in an operational support role) are considered nonfield team members as defined by this HASP. A person will be considered onsite when they are present in the work-area boundary (described in detail in Section 7).

Nonfield team members are considered occasional Site workers in accordance with the HAZWOPER (29 CFR 1910.120) and must receive site-specific HASP training before entering the work-area boundary of the project site. They must also meet all required training for the area of the site they have a need to access. Also, an OSHA-qualified site supervisor will supervise nonfield team personnel who have not completed their 3 days of supervised field experience in accordance with the HAZWOPER.

### 2.1.19 Visitors

All visitors with official business at the project site (including INEEL personnel, representatives of DOE, and state or federal regulatory agencies) may only proceed into the work-area boundary during operational activities after meeting the following requirements:

- Receive site-specific HASP training or hazard briefing based on specific tasks taking place
- Provide proof of meeting all training requirements specified in Section 4
- Review and sign applicable JSA rosters for the particular operation or area(s) to be accessed
- Provide objective evidence of PPE training and wearing the appropriate PPE for the area of the site accessed (29 CFR 1910.132).

A fully trained task-site representative (e.g., STR, HSO, or a designated alternate) will escort visitors when entering the work-control boundary at the project site, as site conditions warrant, and as deemed appropriate by the STR.

**NOTE:** *Visitors will not be allowed into controlled work areas during certain tasks to minimize risks to visitors. The determination of a visitor's need for access into the work-area boundary will be made by the STR and subcontractor superintendent, in consultation with the HSO and safety professional as appropriate.*

A casual visitor to the task site is a person who does not have a specific task to perform or other official business to conduct at the project site. **Casual visitors are not permitted on the project site.**



### **3. RECORDKEEPING REQUIREMENTS**

#### **3.1 Industrial Hygiene and Radiological Monitoring Records**

When BBWI IH support is required, the IH will record airborne monitoring and sampling data (both area and personal) collected for exposure assessments in the INEEL hazards assessment and sampling system. All monitoring and sampling equipment will be maintained and calibrated according to INEEL procedures and the manufacturer specifications. Industrial hygiene airborne monitoring and sampling exposure assessment data are treated as limited access information and maintained by the IH in accordance with *Manual 14B—Safety and Health—Occupational Medical and Industrial Hygiene* (Manual 14B) procedures.

The RCT maintains a logbook of radiological monitoring, daily project operational activities, and instrument calibrations. Radiological monitoring records are maintained in accordance with *Manual 15B—Radiation Protection Procedures* (Manual 15B).

Project personnel or their representatives have a right to the monitoring and sampling data (both area and personal) of both the IH and the RCT. Results from monitoring data may be communicated to all field personnel during daily plan-of-the-day (POD) meetings and formal prejob briefings in accordance with “Performing Pre-Job Briefings and Documenting Feedback” (MCP-3003).

Subcontractor monitoring and sampling information will be provided by the subcontractor to the STR for inclusion in the project file.

#### **3.2 Site Attendance Record**

A site attendance record will be used to keep a record of all personnel (i.e., field team members and nonfield team members) onsite each day and to assist the area warden with conducting personnel accountability, should an evacuation take place (see Section 11 for emergency evacuation conditions). Personnel only will be required to sign in and out of the attendance record once each day. The STR is responsible for maintaining the site attendance record and for ensuring that all personnel on the project site sign in.



## 4. PERSONNEL TRAINING

All project personnel will receive training as specified in the HAZWOPER standard (29 CFR 1910.120 and 29 CFR 1926.65), the SRM, and the PWO, as applicable. Table 4-1 summarizes the project-specific training requirements for personnel based on responsibilities at the project site, potential hazards, and other training requirements.

Changes to the training requirements listed in Table 4-1 may be necessary based on changing field conditions. Any changes to the requirements listed in Table 4-1 must be approved by the HSO with concurrence from the STR, project manager, nuclear facility manager, subcontractor superintendent, RCT, and IH, as applicable. These changes should be based on site-specific conditions.

Table 4-1. Required project training table.

Training	Personnel Requiring Access into the Work Control Areas (e.g., Contamination Reduction Zone or Exclusion Zone)	Personnel Requiring Access into the Subsurface Disposal Area But Not the Work Control Areas (e.g., Contamination Reduction Zone or Exclusion Zone)	Personnel Requiring Access into the Radioactive Waste Management Complex But Not the Subsurface Disposal Area
40-hour HAZWOPER <sup>a</sup> - operations	Yes		
24-hour HAZWOPER <sup>a</sup> - operations		Yes	
Radiation Worker II (minimum)	Yes		
Radiation Worker I (minimum)		Yes	
Project-specific HASP training <sup>b</sup>	Yes	Yes	
RWMC access training	Yes	Yes	Yes (or e)
Cardiopulmonary resuscitation, medic first aid	c	c	
Respirator training (contingency only)	d	d	
Site-access training (blue or orange card)	Yes	Yes	Yes (or e)
Beryllium Safety Training (TRN-804)	Yes		

Note: Shaded fields indicate specific training is not required or applicable

a. Includes 8-hour HAZWOPER refresher training as applicable and supervised field experience as follows: 40-hour HAZWOPER = 24-hour supervised field experience, 24-hour HAZWOPER = 8-hour supervised field experience

b. Includes project-specific hazard communication, site access and security, decontamination, and emergency response actions, as required by HAZWOPER (29 CFR 1910.120[e])

c. At least one trained person onsite when field team is working; health and safety officer will determine appropriate number of personnel requiring training

d. Only required if entering areas exceeding action levels in accordance with industrial hygiene requirements or as necessary based on airborne radiological contaminant requirements

e. Escorted within the RWMC; not required for areas outside the RWMC facility

HASP = health and safety plan

HAZWOPER = "Hazardous Waste Operations and Emergency Response" (29 CFR 1910.120 and 29 CFR 1926.65)

RWMC = Radioactive Waste Management Complex



## 4.1 General Training

All project personnel are responsible for meeting required training (including applicable refresher training). Evidence of training will be maintained by the subcontractor at the project site or must be available electronically (e.g., Training Records and Information Network). Nonfield team personnel and visitors must be able to provide evidence of meeting required training for the area of the site they wish to access before being allowed into project areas.

Examples of acceptable written training documents include: (1) a 40-hour OSHA HAZWOPER card, (2) a respirator authorization card, (3) a medic or first-aid training card, or (4) a copy of an individual's or department's (INEEL only) Training Records and Information Network system printout demonstrating completion of training. Upon validation, a copy of the training certificate issued by an approved non-INEEL training vendor or institution is also acceptable proof of training. As a minimum, all personnel who access the controlled work location are required to wear PPE and must provide objective evidence of having completed INEEL computer-based PPE training (00TRN288), or equivalent, in accordance with "Personal Protective Equipment" (29 CFR 1910, Subpart I).

## 4.2 Project-Specific Health and Safety Plan Training

Before beginning work at the project site, project-specific HASP training will be conducted by the HSO (or designee). This training will consist of a complete review of a current copy of the project HASP with time for discussion and questions. Project-specific HASP training can be conducted in conjunction with or separately from the required formal prejob briefing (MCP-3003).

The project-specific HASP training will be documented by electronically acknowledging completion of reading the HASP in EDMS; by signing on Form 361.25, "Group Read and Sign Training Roster," for the HASP; or by an equivalent means approved by the STR that indicates the individual has reviewed the HASP, understands the project tasks and associated hazards and mitigations, and agrees to follow all HASP and applicable work safety requirements.

A trained OSHA HAZWOPER 8-hour supervisor (HSO or other person trained as a HAZWOPER supervisor) will monitor each newly 24-hour or 40-hour trained worker's performance to meet the 1 or 3 days of supervised field experience, respectively, in accordance with HAZWOPER (29 CFR 1910.120[e]). Following the supervised field experience period, the supervisor will complete Form 361.47, "Hazwoper Supervised Field Experience Verification," or equivalent, to document the supervised field experience.

**NOTE:** *Supervised field experience is only required if personnel have not previously completed this on-the-job training at another Comprehensive Environmental Response, Compensation, and Liability Act site (documented), or they are upgrading from 24- to 40-hour HAZWOPER training. A copy must be kept at the project site as evidence of training or be available electronically.*

## 4.3 Daily Plan-of-the-Day Briefing and Lessons Learned

The subcontractor superintendent or designee will conduct a daily POD meeting. During this meeting, daily tasks are to be outlined; hazards identified; hazard controls, mitigation, and work zones reviewed; PPE requirements discussed; and employee questions answered. At the completion of this meeting, any new work control documents will be read and signed (e.g., SWPs and JSAs).

Particular emphasis will be placed on lessons learned from the previous day's activities and how tasks can be completed in the safest, most efficient manner. All personnel will be asked to contribute ideas to enhance worker safety and mitigate potential exposures at the project sites.



## **5. OCCUPATIONAL MEDICAL SURVEILLANCE PROGRAM**

Task-site personnel will participate in either the INEEL Occupational Medical Program (OMP), as required by “Hazardous Waste Operations and Emergency Response” (MCP-2748) for BBWI employees, or HAZWOPER-compliant medical surveillance program for subcontractor personnel. Medical surveillance examinations will be provided without cost to the employee before assignment, annually, after termination of HAZWOPER duties or employment, as soon as possible upon notification by an employee that the employee has developed signs or symptoms indicating possible overexposure to hazardous substances, or when an employee has been injured or exposed above published exposure levels in an emergency situation. This includes the following personnel:

- Personnel who are or may be exposed to hazardous substances at or above the OSHA permissible exposure limit or published exposure limits without regard to respirator use for 30 or more days per year
- All personnel who wear a respirator for 30 days or more a year or as required by “Respiratory Protection” (29 CFR 1910.134)
- All employees who are injured, become ill, or develop signs or symptoms because of possible overexposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation.

Personnel who wear a respirator in performance of their job, or who are required to take respirator training to perform their duties under this plan, must participate, at least annually, in the medical evaluation program for respirator use, as required by “Respiratory Protection” (29 CFR 1910.134).

A copy of the project HASP, the JSA, exposure assessments, PPE requirements, MSDSs, and other exposure-related information will be made available upon request to the OMP physician (and subcontractor physicians) conducting medical surveillance for employees participating in this project. Exposure monitoring results and hazard information furnished to the physician must be supplemented or updated annually as long as the employee is required to maintain a hazardous waste or material employee medical clearance.

Initial exposure evaluation indicates that personnel exposure to hazardous substances at or above the action levels for substance-specific materials is not anticipated. If regulatory mandated substance-specific standard action levels are triggered, then affected personnel will be enrolled in the applicable substance-specific medical monitoring program in accordance with “Occupational Safety and Health Standards” and “Safety and Health Regulations for Construction” (29 CFR 1910; 29 CFR 1926).

### **5.1 Bechtel BWXT Idaho, LLC, Employee Medical Surveillance Requirements**

The OMP physician will evaluate the physical ability of each BBWI employee to perform the work assigned, as identified in the site HASP or other job-related documentation. A documented medical clearance (e.g., physician’s written opinion) will be provided to the employee and line management stating whether the employee has any detected medical condition that would place him or her at increased risk of material health impairment from work in hazardous waste operations, emergency response operations, respirator-use areas, or confined-space entry areas (as applicable). The physician may impose restrictions on the employee by limiting the amount and type of work performed.

## 5.2 Subcontractor Employee Medical Surveillance Requirements

As required, subcontractor project personnel will participate in a subcontractor medical surveillance program that satisfies the requirements of HAZWOPER (29 CFR 1910.120; 29 CFR 1926.65). This program must make medical examinations available before assignment, annually, and after termination of hazardous waste duties. The physician's written opinion will serve as documentation that subcontractor personnel are fit for duty.

Medical data from the subcontractor employee's private physician, collected pursuant to hazardous material worker qualification, will be made available to the INEEL OMP physicians upon request.

## 5.3 Biological Monitoring Programs

### 5.3.1 Industrial Hygiene Biological Monitoring Programs

The IH, in conjunction with the subcontractor HSO, shall review exposure potential to nonradiological COCs and establish biological monitoring requirements as required in applicable substance-specific standards. The BBWI and subcontractor employees will participate as required, if identified as applicable.

### 5.3.2 Radiological Assay Program

All subcontractor and BBWI employees working inside the posted radiological areas at the work site will participate in a radiological assay program. Personnel will be required to have a baseline radiological assay before beginning work onsite. The program is a random selection and event-based program. Each month during onsite work activities, a random process based on a preset percentage will identify personnel to participate in the radiological assay program. Also, any personnel involved in an incident involving an unanticipated release of radiological contamination will be required to participate in the radiological assay process.

## 5.4 Injuries on the Site

It is policy of the INEEL that an OMP physician will examine all injured personnel if (1) an employee is injured on the job, (2) an employee is experiencing signs and symptoms consistent with exposure to a hazardous material, or (3) there is reason to believe that an employee has been exposed to toxic substances or physical or radiological agents in excess of allowable limits.

**NOTE:** *In the event of an injury, subcontractor employees will be taken to the closest INEEL medical facility (CFA-1612) to have an injury stabilized before transport to the subcontractor's treating physician or medical facility.*

In the event of a known or suspected injury or illness because of exposure to a hazardous substance or physical or radiological agent, the employee will be transported to the nearest INEEL medical facility for evaluation and treatment, as necessary. The HSO is responsible for obtaining as much of the following information as is available to accompany the individual to the medical facility:

- Name, job title, work (site) location, and supervisor's name and phone number
- Substance, physical or radiological agent exposed to (known or suspected), and MSDS, if available

- Nature of the incident, injury, or exposure and related signs or symptoms of exposure
- First aid or other measures taken
- Locations, dates, and results of any airborne exposure monitoring or sampling
- PPE in use during this work (e.g., type of respirator and cartridge used).

Further medical evaluation will be determined by the treating or examining physician, according to the signs and symptoms observed, hazard involved, exposure level, and specific medical surveillance requirements established by the OMP director in compliance with HAZWOPER (29 CFR 1910.120).

The RWMC shift supervisor will be contacted if any injury or illness occurs at the project site. As soon as possible after an injured employee has been transported to the INEEL medical facility, the STR or designee will make notifications as indicated in Section 11.

